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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,580	12/20/2001	Brian R. Janes	01-659US	3268
719	7590	07/18/2005	EXAMINER	
CATERPILLAR INC. 100 N.E. ADAMS STREET PATENT DEPT. PEORIA, IL 616296490			LOWE, MICHAEL S	
			ART UNIT	PAPER NUMBER
			3652	

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/028,580	Applicant(s) JANES ET AL.	
	Examiner M. Scott Lowe	Art Unit 3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on the appeals brief filed 4/22/05.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-48 is/are pending in the application.
- 4a) Of the above claim(s) 36-46 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-35,47 and 48 is/are rejected.
- 7) ☐ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

In view of the appeal brief filed on 4/22/05, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

***Claim Rejections - 35 USC § 101 & § 112***

After consideration of the amendment filed 9/29/04, the indication of allowability of claims 1-7 has been withdrawn.

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1,4,11,12,13,15-35,47,48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 states " a second load member structured and arranged for coupling to the first load bearing member". The last 8 lines of the claim lay out a coupling means of the second load member but are not correlated with to the aforementioned limitation.

Claims 12,28 fails to define the orientation of the centerline axis of the plates. For example the centerline could be that of the longitudinal plane the plates are in or it could be perpendicular to longitudinal plane of the plates (stacked plates). If claim 12 is better defined to have the collinear centerlines be in the longitudinal plane of the plates then this claim would be allowable over the known prior art.

Claim 13 recites the limitation "said first bearing member" in line 2. There is insufficient antecedent basis for this limitation in the claim. For sake of examination it is assumed applicant meant, "said first load bearing member".

Claims 1,4,11,12,13,15-35,47,48 are also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. See MPEP 2173.05p(II).

Claims 4,11,15-35,47,48 are rejected under 35 U.S.C. 101 because the claim overlaps two different statutory classes of invention (apparatus and process/method). See MPEP 2173.05p(II).

### ***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 16, 20-27, 29-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Peterson (5,611,657).

Re claim 15, Peterson teaches a load bearing arrangement for use with a work machine 10 of the type having a platform, comprising a plurality of pieces connectable to form a load bearing member structured and arranged for pivotable attachment to the platform; and a weldment (not numbered) connecting at least two of said pieces.

Process limitations (such as "simulating for the effects of heat") are method limitations.

Applicant has not shown how these steps would add structural limitations to the apparatus claim.

Re claims 16, 20, 27, 35, Peterson teaches all the claimed structure, while process limitations (such as "laser welding", "simulating for the effects of heat") are method limitations. Applicant has not shown how these steps would add structural limitations to the apparatus claim.

Re claims 21, Peterson teaches load bearing arrangement wherein said first load bearing member (any of the various inherent internal or external supports/walls (of the vehicle) for the arm 56 such as (but not limited to) linkage 64) comprises:

at least one top plate (figures 2-9);

at least one bottom plate (figures 2-9); and

at least one pair of spaced apart side plates (figures 2-9) each attached to said top plate and said bottom plate.

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Re claims 22, Peterson teaches load bearing arrangement wherein said top plate comprises at least one integral mounting structure (figures 2-9).

Re claims 23, Peterson teaches a load bearing arrangement 56 comprising a substantially cylindrical attachment structure 122 extending from at least one said side wall; and wherein said side wall is attached to said attachment structure.

Re claim 24, Peterson teaches a load bearing arrangement wherein said first load bearing member 56 has a transverse width; and said attachment structure 122 spans said transverse width.

Re claim 25, Peterson teaches a load bearing arrangement further comprising at least one reinforcing structure (74,76, internal supports, or the top and bottom plates) attached to at least one said side plate.

Re claims 26, Peterson teaches a load bearing arrangement wherein said reinforcing structure comprises a base portion (inherent, all structures have a base of some sort); and a rib portion (inherent, for example the "thickness" of a plate, where the base is a surface of the plate) extending from said base portion.

Re claims 29,30,33,34, Peterson teaches a pivotally connected attachment bucket 54.

Re claims 31,32, Peterson teaches a load bearing apparatus, comprising:  
a work machine 10 having a platform (not numbered);  
at first member 32, having a longitudinal axis, coupled to said platform;  
a first movement means 42 for moving said first member relative to said platform;  
a second member 34, having a longitudinal axis, pivotally coupled to said first member;

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a second movement means 40 for moving said second member relative to said first member;

a plurality of pieces connectable (see figure 1) to form at least one of said first and second members; and a weldment (inherent) connecting at least two of said pieces.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,4-11,13,14,17-19,47,48, are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson (5,611,657) in view of Liston (US 5,503,234).

Re claims 1,47, Peterson teaches a load bearing arrangement for use with a work machine 10 of the type having a platform, comprising:

a first load bearing member (any of the various internal or external supports (of the vehicle) for the arm such as (but not limited to) linkage 64) structured and arranged for coupling to the platform (base of vehicle 10 or even wheels 24,26);

a second load bearing member 56 structured and arranged for coupling to the first load bearing member and having an end comprising a material having a first yield strength;

an aperture 96 formed in said end and having an aperture wall; at least one support member 122 contained within said aperture adjacent to at least a portion of said

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aperture wall, said support member having an opening sized to receive a bearing (column 4, line 30, "other device"); and

said support member 122 having a second yield strength. Peterson is silent on the whether the second yield strength is greater than said first yield strength. However, Liston teaches bearing sections having higher yield strength in order to improve performance and durability. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Peterson by Liston to have the second yield strength be greater than said first yield strength in order to improve performance and durability.

Re claims 4,11,48, Peterson teaches all the claimed structure, while process limitations (such as "laser welding") are method limitations. Applicant has not shown how these steps would add structural limitations to the apparatus claim.

Re claims 5, Peterson teaches load bearing arrangement wherein said first load bearing member (any of the various inherent internal or external supports/walls (of the vehicle) for the arm 56 such as (but not limited to) linkage 64) comprises:

- at least one top plate (not numbered, figure 1);
- at least one bottom plate (not numbered, figure 1); and
- at least one pair of spaced apart side plates (not numbered, figure 1) each attached to said top plate and said bottom plate.

Re claims 6, Peterson teaches load bearing arrangement wherein said top plate comprises at least one integral mounting structure (not numbered, figure 1).



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Re claims 7, Peterson teaches a load bearing arrangement comprising a substantially cylindrical attachment structure 62, 64, etc., extending from at least one said side wall; and wherein said side wall is attached to said attachment structure.

Re claim 8, Peterson teaches a load bearing arrangement wherein said first load bearing member has a transverse width; and said attachment structure spans said transverse width.

Re claim 9, Peterson teaches a load bearing arrangement further comprising at least one reinforcing structure (inherent internal supports, or the top and bottom plates) attached to at least one said side plate.

Re claims 10, Peterson teaches a load bearing arrangement wherein said reinforcing structure comprises a base portion (inherent, all structures have a base of some sort); and a rib portion (inherent, for example the "thickness" of a plate, where the base is a surface of the plate) extending from said base portion.

Re claims 13, 14, Peterson teaches a pivotally connected attachment bucket 54.

Re claim 17, Peterson teaches an end attached to said load bearing member and comprising a material having a first yield strength;  
an aperture 96 formed in said end and having an aperture wall;  
at least one support member 122 contained within said aperture adjacent to at least a portion of said aperture wall. Peterson is silent on the whether the second yield strength is greater than said first yield strength. However, Liston teaches bearing sections having higher yield strength in order to improve performance and durability. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to

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have modified Peterson by Liston to have the second yield strength be greater than said first yield strength in order to improve performance and durability.

Re claim 18, Peterson teaches said support member 122 comprises a substantially cylindrical structure having a through opening.

Re claim 19, Peterson teaches a bearing (column 4, line 30, "other device") received in said opening.

Claims 4,11,15-35,48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson (5,611,657) in view of Westbroek (US 6,060,682) and further in view of El Wakil ("Processes and Design for Manufacturing").

Regarding the above rejections of claims 4,11,15-35,48, over Peterson with non-structural limitations (such as welding and heat simulation) while the above rejections are complete unto themselves, for sake of completeness, while not required, the following rejections are put forward for the benefit of the applicant:

Regarding the above claims 4,11,15-35,48, El Wakil (pages 71-73,87-91) teaches weldments being simulated for effects of heat in order to choose the correct type of weld and to insure the strength of the welded structure. Westbroek teaches (column 1) that weldment design and simulations are done prior actual construction in order to assure strong welds. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Peterson by El Wakil and Westbroek to have weldments being simulated for effects of heat in order to choose

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prior to construction the correct type of weld and to insure the strength of the welded structure.

***Claim Rejections - 35 USC § 103***

For sake of completeness, while not required, the following rejections are put forward for the benefit of the applicant to address process limitations improperly placed in the apparatus claims:

Claims 15-20,47,48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walth et al (US 6,158,949) in view of Liston (US 5,503,234) and further in view of El Wakil ("Processes and Design for Manufacturing").

Re claims 15,17,47, Walth teaches a load bearing arrangement for use with a work machine of the type having a platform 80, comprising:  
at least one load bearing member 10 structured and arranged for coupling to the platform 80;  
said load bearing member 10 having an end comprising a material having a first yield strength;  
an aperture 70,54 formed in said end and having an aperture wall; at least one support member 56 contained within said aperture adjacent to at least a portion of said aperture wall, said support member having an opening sized to receive a bearing; and  
said support member 56 having a second yield strength. Walth is silent on the whether the second yield strength is greater than said first yield strength. However, Liston teaches bearing sections having higher yield strength in order to improve performance

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and durability. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Walth by Liston to have the second yield strength be greater than said first yield strength in order to improve performance and durability.

Re claims 16,20,48, Walth teaches items connected together but is silent on laser welding. El Wakil teaches (pages 85-87) laser welding as a versatile means of connecting items without causing excessive heat related problems (page 86). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Walth by El Wakil to use laser welding in order to have a versatile means of connecting items without causing excessive heat related problems.

Re claim 18, Walth teaches the load bearing arrangement wherein said support member 56 comprises a substantially cylindrical structure having a through opening.

Re claim 19, Walth teaches a bearing 56 received in said opening.

Claims 15-35,47,48, are rejected under 35 U.S.C. 103(a) as being unpatentable over Walth et al (US 6,158,949) in view of Westbroek (US 6,060,682) and further in view of El Wakil ("Processes and Design for Manufacturing").

Re claims 15,17-20,47,48, Walth teaches a load bearing arrangement for use with a work machine of the type having a platform 80, comprising a plurality of pieces connectable to form a member 10 structured and arranged for pivotable attachment to the platform; a weldment (columns 3-4, etc.) connecting at least two of said pieces.

Walth is silent on weldments being simulated for effects of heat on at least one of said

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pieces subject to said weldment. However, El Wakil (pages 71-73,87-91) teaches weldments being simulated for effects of heat in order to choose the correct type of weld and to insure the strength of the welded structure. Westbrook teaches (column 1) that weldment design and simulations are done prior actual construction in order to assure strong welds. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Walth by El Wakil and Westbrook to have weldments being simulated for effects of heat in order prior to construction to choose the correct type of weld and to insure the strength of the welded structure.

Re claims 16, 35, Walth as modified teaches said effects being at least one of stress and deformation.

Re claim 27, Walth teaches items connected together but is silent on laser welding. El Wakil teaches (pages 85-87) laser welding as a versatile means of connecting items without causing excessive heat related problems (page 86). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Walth by El Wakil to use laser welding in order to have a versatile means of connecting items without causing excessive heat related problems.

Re claim 21, Walth teaches load bearing arrangement wherein said member 10 comprises:

- at least one top plate 16;
- at least one bottom plate 18; and
- at least one pair of spaced apart side plates 20, 21 each attached to said top plate 16 and said bottom plate 18.

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Re claim 22, Walth teaches load bearing arrangement wherein said top plate comprises at least one integral mounting structure (not numbered but shown on figures 2-4).

Re claim 23, Walth teaches a load bearing arrangement comprising a substantially cylindrical attachment structure 50, 56 extending from at least one said side wall; and wherein said side wall is attached to said attachment structure 50, 56.

Re claim 24, Walth teaches a load bearing arrangement wherein said member 10 has a transverse width; and said attachment structure 50, 56 spans said transverse width.

Re claim 25, Walth teaches a load bearing arrangement further comprising at least one reinforcing structure (30, 26 or 42 by way of 30,26) attached by to at least one said side plate 20, 21.

Re claim 26, Walth teaches a load bearing arrangement wherein said reinforcing structure comprises a base portion (not numbered); and a rib portion (not numbered) extending from said base portion.

Re claim 28, Westbrook teaches (figure 6, column 1, lines 9-15) a load bearing arrangement for use with a work machine of the type having a platform, comprising: a load bearing member comprises a first side and a second side; one of said first side or said second side comprises a plurality of side plates 12c,14c; each said side plate having a centerline axis; and at least two adjacent side plates, each having a different thickness, on one of said first side or said second side are

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coupled together such that said centerline axis of each said side plate 12c,14c are collinear.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Walth by the teaching of Westbrook to have the sides made of adjacent plates coupled together on collinear centerlines in order to improve strength and to conform with standard manufacturing practice (column 1, Westbrook).

Re claims 29, 30, 33, 34, Walth teaches a pivotally connected attachment bucket 82.

Re claim 31, Walth teaches a load bearing apparatus, comprising: a work machine having a platform 80; a first member 10, having a longitudinal axis, coupled to said platform 80; a first movement means (not numbered) for moving said first member 10 relative to said platform; a second member 68, having a longitudinal axis, pivotally coupled to said first member 10; a second movement means (not numbered) for moving said second member 68 relative to said first member 10; a plurality of pieces connectable to form at least one of said first and second members; a weldment connecting at least two of said pieces. Walth is silent on weldments being simulated for effects of heat on at least one of said pieces subject to said weldment. However, Wakil (pages 71-73,87-91) teaches weldments being simulated for effects of heat in order to choose the correct type of weld and to insure the strength of the welded structure. Westbrook teaches (column 1) that weldment design and simulations are done prior actual construction in order to assure strong welds. It would have been obvious to one

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of ordinary skill in the art at the time the invention was made to have modified Walth by El Wakil and Westbroek to have weldments being simulated for effects of heat prior to construction in order to choose the correct type of weld and to insure the strength of the welded structure.

Re claim 32, Walth teaches first and said second movement means comprises hydraulic cylinders.

### ***Allowable Subject Matter***

Claim 12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ko et al (US 5,316,709) teaches a similar load bearing arrangement.

Applicant's arguments filed 4/22/05 have been fully considered but they are not persuasive.

Applicant's arguments with respect to claims 1,4-14,47,48 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 4/22/05 regarding Walth (for claims 15-35), Liston and Westbroeck have been fully considered but they are not persuasive.



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Walth teaches the claimed structure found in claims 15-31. El Wakil clearly teaches on page 71 various types of welding including laser welding and why it would be obvious to use (page 86) and heat simulation (page 71,89-91). El Wakil does not need to teach the structure since it is taught by the primary reference (Walth or Peterson). Liston is not used to teach heat simulation. Rather Liston is used as a teaching of having higher yield strength at contact surfaces under relatively larger forces. Concerning the point concerning yield strength ceramics, clearly the references are dealing with welded structures such as metals and not ceramics. Westbroeck is also not used for a teaching of heat simulation. Finally, as addressed in the rejection section, the welding and heat simulation arguments and limitations are not appropriate for apparatus claims and should be removed.

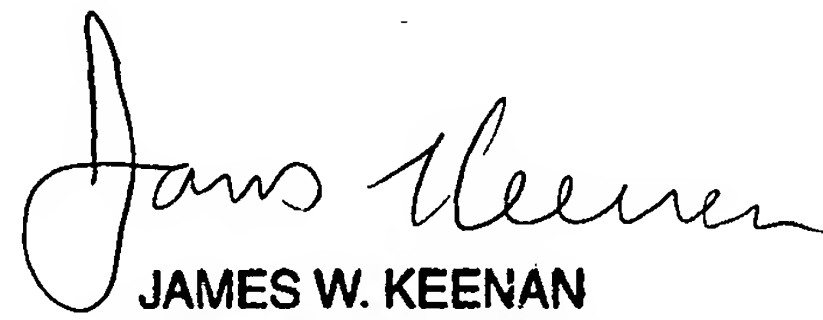
Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Scott Lowe whose telephone number is (571) 272-6929. The examiner can normally be reached on 6:30am-4:30pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571) 272-6607. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

msl

  
**JAMES W. KEENAN**  
**PRIMARY EXAMINER**